

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**



FIG. 1A

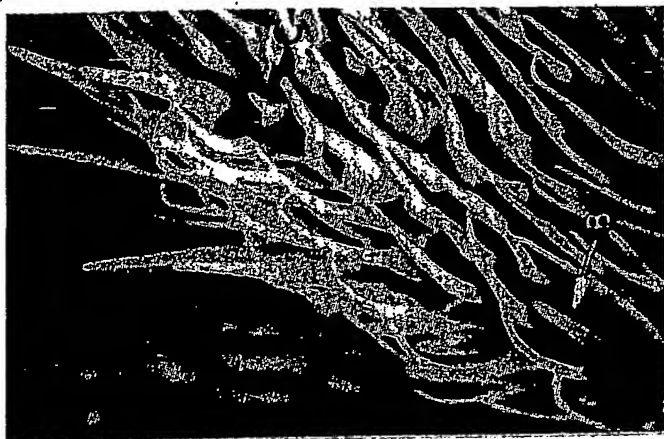
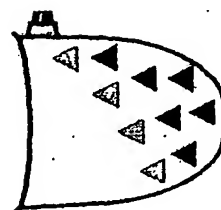


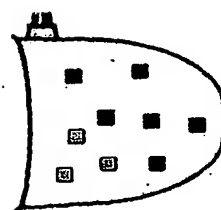
FIG. 1B

FIG. 1C



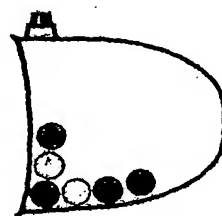
TRICHODEA

FIG. 1D



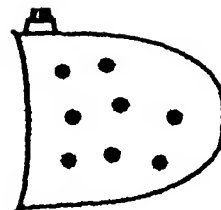
COELOCONICA

FIG. 1E



LARGE
BASICONICA

FIG. 1F



SMALL
BASICONICA

FIG. 2C

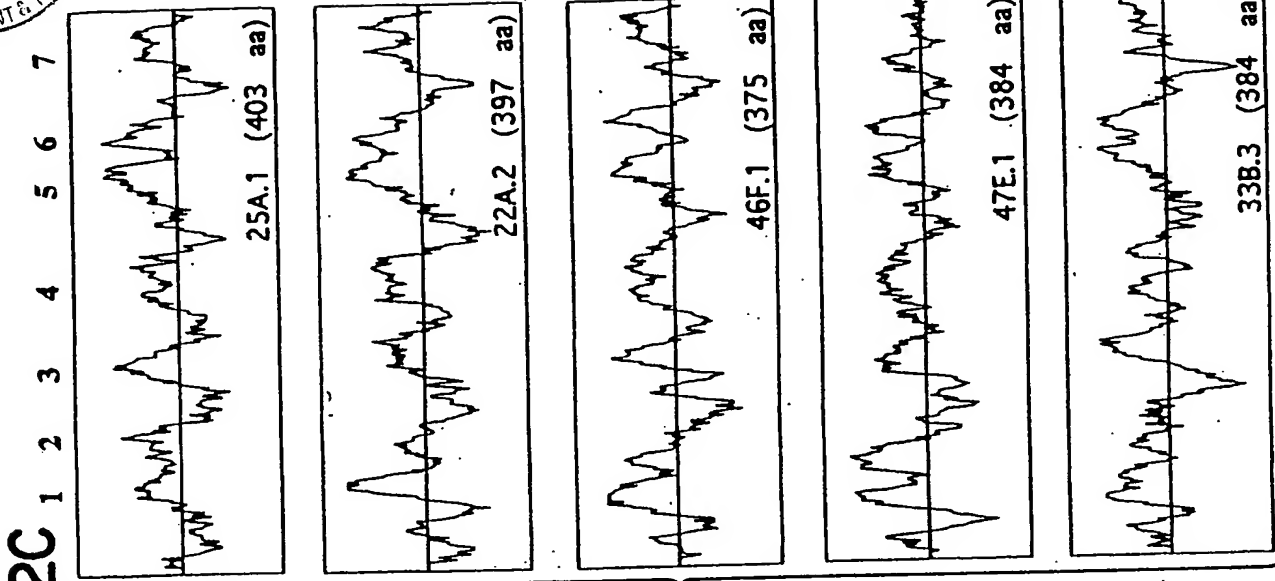


FIG. 2A

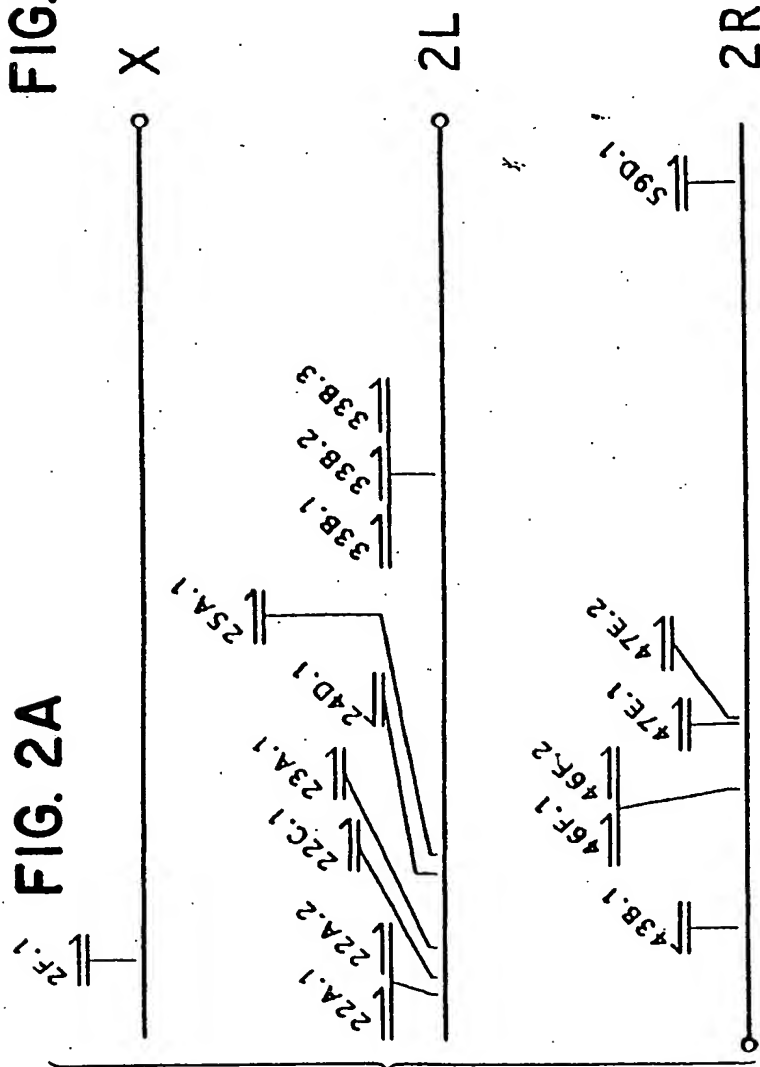
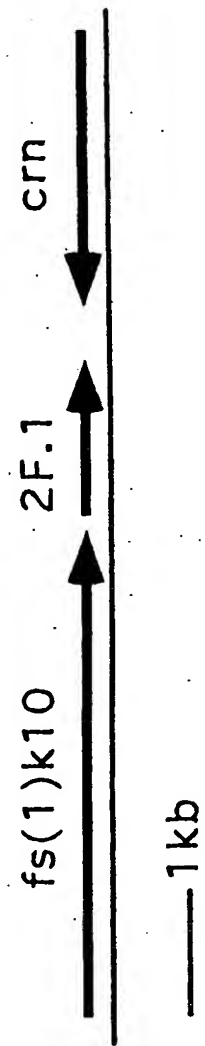


FIG. 2B



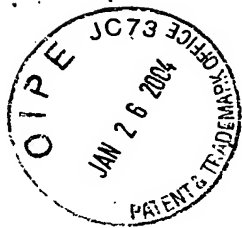


FIG. 3A

1
59D.1 1 -----MAEVRDLSLEFFKSHWTAHRYLGVAFHVENWKNLYVFISVSNLLVTLCYVPVHLGISLFRN---RTTITEDILN 72
23A.1 1 -----MKLSETLKIDYFRVQLNARICGA-----LDLSEGRYHSWMLLCILVYLPPTMLLRGVYS--FEDPVENNFS 67
33B.1 1 -----MDSRRKVRSENLYKTYWLYMRLGV-----EGDYPRRLVDFTTITSFITTILFPVHLILGMYYK----PQIQVFRSD 67
33B.2 1 -----MDLKPRVIRSEDIYRTYWLYMHLGL-----ESNFFLNRLDLVITTFVTIWPPIHLILGLFME---RSLGDVCKGL 69
33B.3 1 -----MWIIDSLSFYRPFWICMRLLP--TFKDDSSRPVQLYVVLHILVTLWFPPLHLLHLL---PSTAEFFKNL 68
2F.1 1 -----MEKQEDFKLNTHSAVYHWRVWELTGLMRPPGVSSLLYVVSITVNLVTVLPPLSLLARLFT---TNMAGLCENL 74
22A.1 1 -----MLSKFFPHIKEPLSERVKS RDAFYLD RVMMSFGWTEPENKRWILPYKLWLA FNIVMLILPISISIEYLHREKTF SAGEFLSSI 87
22A.2 1 -----MLSQFFPHIKEPLSERVKS RDAFYLD RVMMSFGWTVPENKRWDLHYKLWSTFTVLLIFILLPISVSVEYIQREKTF SAGEFLSSI 87
47E.1 1 -----MDSFLQVKSTIALGLGDFLSENRKRWKRPYRAMNVFSIAAIFPFI LA AVLHNW---KNVLLADAM 64
46F.1 1 -----MSKGEIFYKGQKAFENILSLWPQIERRWRIHQVNVYVIVFWVLLFDLLVLHV-----MANLSYMS 64
46F.2 1 -----MVTEDFYKYQVWYFQIL--GVWQLPTWAADHQRRFQSMRFGFILLVILFIMLLF-SFEMLNNISQVR 64
22C.1 1 -----MTDSGQPAIADHFYRIPRISGLIVGLWPQIRGGGRPHAHLLFVFAFANVVVGAVGEVSGCVHLDN-----LVVALEAF 77
24D.1 1 -----MERHYFMVPKFALSLIGFYPEQKR-----TVLYKLWSSFFNFILTYGCYAEAYYGIHYIPI----NIATALDA 65
43B.1 1 -----MTIEDIGLVGINVRMWRHLAV--LYPTGSSWRKFAVLVPYAMNMQFVLLRMWGD-----LPATILNM 64
47E.2 1 MNDSGYQSNLSLLRVFLDEFRSLRQESPLPRAFYVYVRAFLSPLRYRWINLFIMCNVMTIFWTMFVALPESK----NVTMGDD 84
25A.1 1 --MFGHFKLVYPAPISEPIQSRDSNAYMMETLRNSGLN--LKNDFGIGRKIRWVFSFTYNNMVL[PVSPFINVVIHLAEFPPELLQSD 84



FIG. 3B

3

2

59D.1	73	TTFATCTACVRCLLYAYNIKDVLEMERLLRLDERVVGPEQRSYGO-----VRVQLRNVLVYVFIGIYMPICALFAELSELKKEE	152
23A.1	68	SLTVTSLSNLMKFCMYVAQLTKMVEVQSITGQDARVSGESOSERHRN-----MTEHLLRMSKLFQITVAVVFIIAAVPFVETE	147
33B.1	68	HFTSECLFCYKIFFCFRWKLKEIKTIEGLLODLSRVESEERNYFNQ-----NPSRVARMLSKSYLVAATSAITATVAGLESTG	148
33B.2	70	PITACFFAFKFCFRKSEIKETELFKELDQALSREECEFFNQ-----NTRREANFTWKSFIYAVGSLNISASIVLFGGG	150
33B.3	69	TMSLTCVACSLKHVAHLYHLPOIVEITESIEQDITFIASEQEHRYRD-----HVHCHARFRTRCLYISEGMIYALFLGVENQV	148
2F.1	75	TITITDIVANUKFANVWVRKQLHEITRSLLRLMDARARLVGDPEEISA-----LRKEVNIAGQTFRTFASIFVFGTTLSCVRVVVR	155
22A.1	88	EIGVNMYGSSFKCAFTLIGFKKROEAKVLLDQDKRCLSDKERSTVHR-----YVAMGNFFDILYHIFYSTFVVMNFPYELLE	165
22A.2	88	QIGVNMYGSSFKSYLTMMGYKKROEAKMSLDELKRCVCDEERTIVHR-----HVALGNFCYIFYHYIAYTSFLISNFLSETMK	165
47E.1	65	VALLITILGLEKFSMILYLRDFKRLIDKFRLLMSNEAEQGEYAEILNAANKQDQRMCTLFRTCCELLAWALNSVLPVLMGLSYWLA	152
46F.1	65	EVVKAIFILATSAGHTTKL-LSIKANNVQMEELFRRLDNEEFPRPGANEELIFAAACERSRKL RDFYGALSFAALSMLIPQFALDWS	151
46F.2	65	EILKVFFMFATEISCMAKL-LHLKLSRKLAGLVNDAM-LSPEFGVKSE--QENQMLELDRVAVVRNRNSYGIMSLGAASLILIVPCFD	148
22C.1	78	CPGTTKAVCVLKLWVFFRS---NRRWAEIVQRLRATLSLLSSGTAT-----NAAFTLQPLIMGLYRWIVQLPGQT	146
24D.1	66	CPVASSILSLVNMVAIWNY---QDELRSJTERFYTLATQLTFLLCC-----GFCTSTSYSVRHLIDNILRRTHGKDWIYETPFKM-	144
43B.1	65	FFFSATFNALMRTWLVIKRRQFEELGOLATLFHSILDSTDWGRGI--LRRAREARNLAILNLSASFELDIVGALFFEYKFPPIGVV	150
47E.2	85	VWISQWALVFTKIFYNHLR---CDEIDELISDFEYNNRELPHNIDEE-----VLGWORLCYVIESGLYINCFLVNFSSAIFLQP	163
25A.1	85	QLCLNTWCFAUKFFTLIVYTHRLEANKHFDELDKYCYKPAEKRVRD-----WVATTITRLYTLFVWVYVLYATSTILDLGLLH	162

FIG. 3C

4

59D.1	153	R-----GLMPAMFPFDWLHST----	RMYIANAYQIVGISFQQLQNVVSDCF	PAVVLC	LISSHIKMLNRFEEVGLDPARDAEK----	228
23A.1	148	L-----SLPMPMFPFDWKNM----	VAYIGALVFQIEGYVFOIMQCFADSP	PLVLYL	ISEOCLILRISEIGYGYKTLEENEQ----	225
33B.1	149	R-----NLMYLGMPFPYDFQATA----	AIYMWISFSYQAGSSLLILENLANDSY	PPITFCV	SGHVRLIMRLSRIGHDVKLSSENT--	226
33B.2	151	H-----KLLYPAMFPYDVQATE----	LIFWLSVTYQIAGVSLAILQNLANDSY	PPMTFCV	SGHVRLIMRLSRIGHDVKLSSENT--	228
33B.3	149	I-SGNWELLYPAYFPFDLESNR----	FLGAVALGYQFWSLVEGFQGLNDITY	PTLCLL	AGHVHLSIRNGQLGYFDDETVWNHQ--	230
2F.1	156	P---DRELLYPAMFGVDWIMHST----	RMYVLINIYQIFGLIVQAIQNCASDYP	PAFLCL	LIGHMRALELRVRRIGCRTEKSNKGQTYE	237
22A.1	166	R-----RHAWRMYPYIDSEQ-----	FYTISS-IAECFLMTEAIYMDLCTDVC	PLISML	MARCHISLKKORLNLRSKPGRTEDEVL--	241
22A.2	166	R-----IHAWRMYPYVDPEKQ-----	FYTISS-IAEVLIRGWAVFMDLCTDVC	PLISMV	IARCHITILLKORLNLRSKPGRTEDEVL--	241
47E.1	153	G-HAEPELFPCLFPWNTHIR-----	NWLSFTWSAFSTGVVLPVSLDITFC	SFTSNL	CAFFKIAQYKVVRFKGGSLKESQATL--	233
46F.1	152	H-----LPDKTYNPLGENTGS----	PAYMILLYCYQCLALSVSCITNIGFDS	LCSSLF	FIFLKOLDITAVRLDKIGRLITTSGGTVE--	228
46F.2	149	N---FGEPLAMLEVCSIEGWI-----	QYMSOYL FHSICLLPTCVLNITYDS	WAYSLL	CFLKVQLQMLVLRLEKLPVIEPQDNEKI--	227
22C.1	147	E-----LPFNIIILPSFAVQPG-----	VFPLTYVLLTAGACTVFAFSFVDGFF	ICSCLY	ICGAFRLVQODIRRIFFADLHGVDVFTF--	222
24D.1	145	-----MFPDLLLLRLP-----	LPITYILVHHWGYITVVCVFGADGFF	GLGFLY	FTVLLCLQDDVCDLLEVENIEKSPSE--	214
43B.1	151	T-FFLPAHPFGLALPGVSMTSS----	PVMEVITYLAQLPTPLLLSMYMPFVSL	FAGLA	IFGKAMLOILVHRLGOIGGEEQSEEEERFQ--	232
47E.2	164	L-LGEGKLPFHSVYPPFQWHRDLHPYTF	FWFLYIMQSLTSQHNLSILMVDWVG	ISTFL	QALNKLKLCIEIRKLGDMEVSDKRFHE--	248
25A.1	163	H-----RVPYNTYPPFINWRVD-RTQM	YIQS-FLEYFTVGAIYVATATDS	MPYTY	VAALRTHTILLKORTIYLGDPSSNEGSSDPS--	241





FIG. 3D

590.1	229	-----DLEACTIDHKLHLELFRRIEAFISLPLMIQITVITALNVCIGLAALVFFVSE---	PMARMYFI[F]SLAMP[L]QIT[F]PSC[F]FGT	305
23A.1	226	-----DLVNCITROONALYRLLDVTKSLVSPMMVQFMVIGINIAITLFLVIFYVET---	LYDRIYVLCFLLGITVQITVPLCYNGIT	302
33B.1	227	-----RKLTIEGIDHRLMKIIRL[R]RSTLHLSQLGOF[SS]GINISITLINILFFAEN---	NFAMLYYAVFFAAMLI[EL]FPSCYNGI	304
33B.2	229	-----KQLTIESIEDHRLMKIVEL[R]RSTMNISQLGOF[SS]GWNISITLVNILFFADN---	NFAITYYGV[F]LSMWLF[EL]FPCCYNGI	306
33B.3	231	-----RLLDYTECHKLLVRHNLVSRITISEVQLVQ[GG]GATLCIIVSYMLFFVGD---	TISLVYVLVFFGVVCVQ[EL]FPSCYFAS	307
2F.1	238	ANREEVYQELTECIRDLARVHRLREIIQRVLSVPCMAQFVCSAAVQCTVAMHFLYVADDH-DHTAMIISIVFFSAVTLEVIYCYFGD		324
22A.1	242	-----EELTECIRDLHRLLDYVDA[RPV]FSGTIFVQ[FL]LIGTVGLSMLNLMFFEST---	FMTGVATCLFMEDVSMET[EP]FCVLCN	318
22A.2	242	-----KELADCVRDLHRLLDYVDA[RSV]FSGTIFVQ[FL]LIGTVGLSMLNLMFFEST---	LSTGVAVVLFMSCVSMQ[EP]FCVLCN	318
47E.1	234	-----NKVFALYQTS[DM]CND-----[UNQ]CYQPTICAOFF[ISS]LQCMGLYFSITFA---	QTEGVYMASFIATIIICAYIYCYCGE	307
46F.1	229	-----QQ[KEN]IRYHMTIVELSKTIVERLLCKPISVQIFCSVLVLTANFYAIAVLSDE---	RLELFKXVTVQACMLIQIT[EL]LCYVAG	306
46F.2	228	-----AMELRECAAYNRIVRFKDLVELFIKGP[GSV]Q[LMCSV]LVSNLYDMSTM[SI]ANGDAIFMLKTCIYQ[LVML]QIT[EL]ICYASN		309
22C.1	223	EMNAEVRHRLAQVVERHNAIIDFCTD[TRQFT]VIVLMHFLSAAFVLCSTILDIMLNTS---	SLSGLTVICVYIAALTQ[EL]LYCFGGN	306
24D.1	215	AEEARIVREMEKLVDRHNEVAELTER[SGVM]VEITLAHFVTSLLIGTSVVDILLFSG-----	LGIIVYVWVYTCAGVET[EL]YCLGGS	297
43B.1	233	-----RLASCIAYHTQVMRYVQ[UNK]LVANIVAVEAIFGSIICSLFLCLNIVIT-----	SPTQISIVMYILTMLVILETYYNRAN	308
47E.2	249	-----EFCRVVRFHQHIKLVGKANRAFNAGFNAQ[LMASF]SLISISTIFETMAAAA--	VDPKMAKFVLLMLVAFID[EL]SLWCVSGT	326
25A.1	242	-----YMFKS[LVDC]IKAHRTMLNFCDAIQPIISGTIFAQFIICGSIIGIIMINMVLFAQ-----	QSTRFGIVIMMAVLLQ[EL]FPLC[F]YCN	321

FIG. 3E

7

59D.1	306	DNEYWF-GR	HYA	AFSCN	HTQNR	FRK	KMM	FEQSL	KKST--	AVAGG	MMR	IHL	DTFF	STL	KGAVS	FTT	IIRMRK	379				
23A.1	303	MVQESF-AE	HYA	VECSN	MDQAS	YRGHM	I	LAERT	KRMQL--	LLAGN	LVPIH	LS	TYVAC	WKGVNS	FTT	LMADROG	377					
33B.1	305	LMTMEF-DK	LYA	FESSN	MLKMD	RYNRS	LI	LMQL	TLVPVN--	IKAGG	IVGID	MSA	FFAT	VRMA	SYT	LALS	375					
33B.2	307	LISVEN-NQ	LYA	TYSSN	MMSMN	RSY	SR	LI	IFMQL	TLAEVQ--	IKAGG	MIG	MMNA	FFAT	VRMA	SYT	LALS	376				
33B.3	308	EVAEEL-ER	LYA	FESSN	MDQAS	YRGHM	I	LAERT	KRMQL--	LLAGN	LVPIH	LS	TYVAC	WKGVNS	FTT	LMADROG	384					
2F.1	325	RMRTQS-EA	LCDA	FYDC	NMTEQ	L	PKF	RELL	FTLART	QPSL--	IVAGG	IVALS	ETFEQ	VMRTVS	FTT	LLRAK	397					
22A.1	319	MIIDDC-QE	MSNC	FE	SDMT	SAD	RYKST	LVY	FLHNL	QDPII--	LTAGG	VFPIS	MQTN	LMVKLA	FS	VTVIKQFN	LAERFQ---	397				
22A.2	319	MIMDDC-QE	MADS	FE	SDMT	SAD	RYKST	LVY	FLHNL	QDPII--	LTAGG	VFPIS	MQTN	LMVKLA	FS	VTVIKQFN	LAERFQ---	397				
47E.1	308	NLKTES-AS	FEWA	TYDS	PMHES	LGAGG	AST	SICR	SLISMMR--	AHRG	ERITG	YFFE	ANIL	VRTA	MSY	ITMLRSFS	380					
46F.1	307	EVTQRS-LD	PHELY	KTSW	VDWY	RSR	RIAL	FMQR	LHSTLR--	IRLN	PSL	GFD	MLE	SSV	SFRVL	TELC	TVANFHN	381				
46F.2	310	EVTVQS-SR	LCH	SIYSS	MTGN	RAN	RI	VLL	MMQR	FNSPML--	LSTFN	PTAFS	LEA	FGS	IVNC	SYM	FALLKRVNS	384				
22C.1	307	HVSESS-AA	ADVLYD	MEY	KCDAR	TRK	VIL	MI	LR	RSORAKT--	IAVP	FFTP	SLPALQ--	IL	STAG	SYIT	LLKFTL	377				
24D.1	298	HIMEAC-SN	LARS	TFSS	MYGHS	VRVQ	KMTL	LMVAR	ADRVLT--	IKIP	FFSP	SLET	LT	TS	ILR	FTGSL	IALAKSVI	369				
43B.1	309	EICLEN-NR	VAE	AVN	VPWY	EAG	TR	FKTL	ITFL	MQTQ	IPME--	IRVG	NVY	PM	LA	MQS	LLNASYS	FTMLRGVTGK	383			
47E.2	327	LVYTSVE	VAQA	AFD	IND	HTK	SPG	IQD	ISFV	ILRAQ	KPLM--	YVAE	DFL	PT	LG	TYML	VLNK	YRLLALMQESM	400			
25A.1	322	AIVDDC-KE	LAHAL	FS	SNM	VQDK	RQ	RV	IQ	FLQ	LQD	QPMT--	FTAM	NIF	NIN	LA	TN	INVA	KFAFTV	YAIASG	MNLDQKLSIKE	403

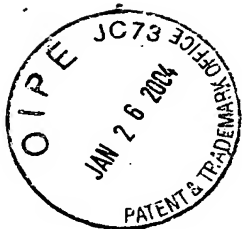


FIG. 4A

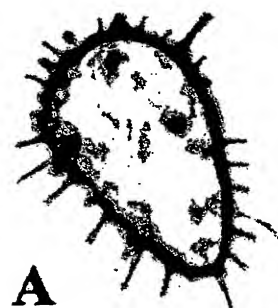


FIG. 4B

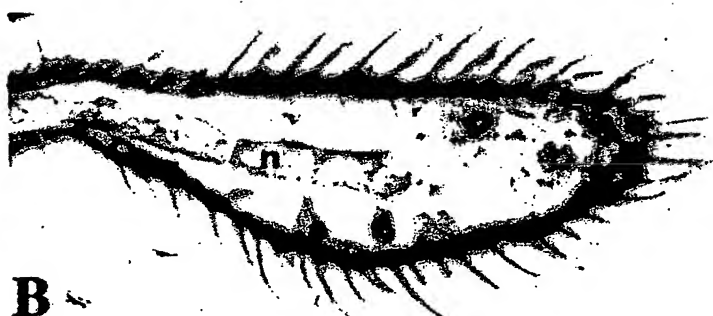


FIG. 4C

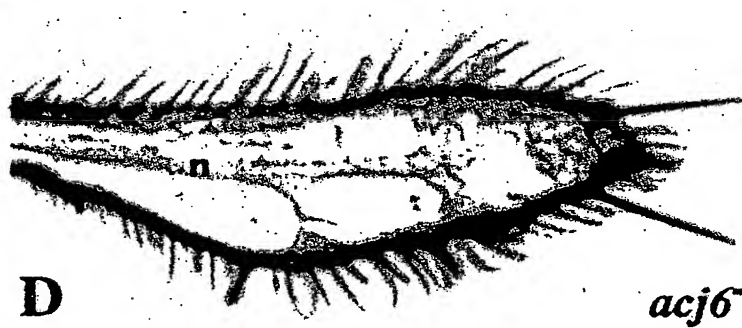


FIG. 4D

FIG. 5A



FIG. 5C



FIG. 5E



FIG. 5B

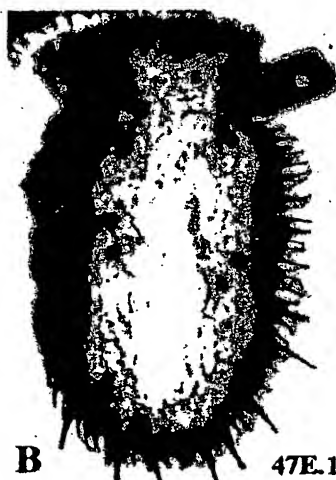


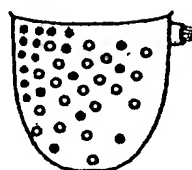
FIG. 5D



FIG. 5F



FIG. 5G



○47E.1
25A.1
22A.2



FIG. 6A

22A.2



FIG. 6B



FIG. 6C

47E.1



FIG. 6D



FIG. 6E

OS-E



FIG. 6F

